

INCIPIENT SYSTEMIC DISTURBANCES
AS SHOWN BY OCULAR SIGNS.*

By E. W. ALEXANDER, M. D., San Francisco.

The diagnosis and prognosis of many systemic conditions have become so intimately connected with the signs and symptoms of ocular origin that proficiency in the use of the ophthalmoscope will become universal amongst internists in a few years.

The significance of an albuminuric retinitis, disseminated choroiditis, Argyll-Robertson pupil, or papilloedema is now instantly appreciated even by the tyro of internal medicine.

Still further, as illustrative of more specialized signs, we find a beginning temporal atrophy to be suggestive of an early multiple sclerosis; transient attacks of diplopia, of tabes; hemorrhages in the retina, of apoplexy, etc.

But what needs to be emphasized is the correlation of eye signs and the finer balance of the organism as a whole: the signs indicative of disturbed vasomotor and trophic nerve functions, of errors of metabolism, and of hygiene.

Most of such lesions of the ocular tunics are dismissed by the thought that they are due to "constitutional defects" (except for their immediate local indications for treatment). But why treat them so casually? We are missing one of the finer privileges of our profession. We are delaying the progress of preventive medicine by not insisting on a careful estimation of the subtle balance of physiological processes.

These disturbances of efficiency naturally fall into several groups.

Those dependent upon the cardiovascular system often come first to the ophthalmologist because of the failure of a very important organ of special sense. But unless the ophthalmologist has such a possibility in mind, the primary cause of the local symptoms will be overlooked.

It is my practice in all adult cases complaining of eye strain, for instance, to ascertain the presence or absence of certain functional defects; for it has been my experience that the subjective symptoms precede any definite objective signs. My suspicions are always aroused by a history of transient attacks of amblyopia, photopsias of various kinds, inability to sustain accommodation, transient attacks of diplopia and vertigo, tinnitus aurum, especially in the recumbent position, flushes of blood to the head, etc. If such symptoms are elicited and it is found that there is a retinal hyperemia or a mild retinal arteriosclerosis, or especially if there is a mild peri-vascular oedema—more pronounced at the arterio-venous crossings—one may be reasonably certain that there is some general vascular disturbance. While such patients may be doing their daily work as usual, not infrequently a high blood pressure is found, or one of the various defects in the cardiac region, or a vasomotor disturbance, or an abnormal blood picture. Furthermore, how can we expect ocular comfort under such conditions even with the most careful attention to the refraction and muscular balance? It is hopeless to alleviate the focal symptoms unless an

internist contemporaneously takes care of the circulatory system.

But the important point is the early recognition of a systemic inefficiency before it has seriously involved the vital organs, before the appearance of a frank retinal arterio-sclerosis with its complications, or a nephritis, or any of the secondary results of cardiovascular failure, in short, before the patient suspects that there is anything wrong with himself.

In respect to the nervous system, the same generalization holds true. Particularly important in the early diagnosis of tabes, multiple sclerosis, and intracranial tumor, are transient attacks of diplopia and amblyopia; also defects in color fields; cerebrospinal syphilis is suggested by unequal pupils before an Argyll-Robertson appears. The systematic study of the fundus in all eye cases, as well as attention to the ocular muscle balance and the more frequent taking of fields will lead to suspicion and diagnosis before ataxia and other serious symptoms appear.

There are other interesting groups associated with the respiratory, nephritic and gastro-intestinal systems, but there are two subjects which are particularly interesting to me.

The first might be entitled the conservation of vision and health in phlyctenular disease, and the second, ocular signs and symptoms of errors of metabolism.

We are glad to see a steady growth in the propaganda for the prevention of blindness due to ophthalmia neonatorum. The ravages of such an inflammation are rapid and destructive, and the physician is keenly alive to the necessity of dealing with it radically. But in ophthalmia due to phlyctenular disease we have a progressive and chronic affair which extends over years; and because its periods of acute exacerbations are not attended with immediate danger to sight, the disease is allowed to run its insidious course, being treated only at its acute intervals as a local condition. What is the result? I am sure I am not exaggerating when I say that I have seen more useless eyes due to dense leucomata of the cornea, with phlyctenulosis as a cause, than I have similar eyes due to ophthalmia neonatorum, or to optic atrophy of glaucoma. But of even greater frequency are those cases, not of useless eyes but inefficient vision due to faint corneal nebulae. These are, numerically, surprisingly large if one will take the trouble to condense an oblique cone of light on the corneae of all patients who see only 6/7 or 6/10 with their correction. I firmly believe that the economical and sociological factors in these large numbers of phlyctenular eyes are worth considering seriously, and further, that the ophthalmic surgeon who allows repeated attacks of phlyctenular keratitis to follow each other without thorough systemic investigation and treatment is as culpable as the one who does not employ or advise Crede's method.

The pathogenesis of phlyctenulosis is still a mooted point, but it is generally agreed that it is due to constitutional defects. I am convinced that there are two main elements in the symptom com-

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plex which are practically always present. The first is a tendency to lymphatic hypertrophy, and the second is a gastro-intestinal disturbance. The two form a vicious circle. The picture may be further elaborated by a tubercular infection of the lymphatic or bones, or an eczema in different localities, carious teeth, purulent middle ear, mental defects, etc.

It is difficult to estimate which is the keystone of this arch of toxic foci, but my experience leads me to place the rôle of the tonsils and adenoids in a prominent place. It is useless to put such a patient on a careful diet and give tonics, while quantities of shiny mucus and particles of putrefied inflammatory products from the tonsils are being constantly swallowed. First enucleate the tonsils and adenoids; then a carefully prepared diet and intestinal regime combined with tonics will develop a tone which can easily prevent further attacks.

Of course, carious teeth must be extracted, tuberculin must be administered in cases which are clearly tubercular, broken down glands must be removed, etc. In not a few cases no progress will be made unless the patient is put to rest in a hospital for two or three weeks. I am particularly partial in such cases to diaphoresis, intestinal lavage, control of the usual acidosis with antacids and diet, and massage.

It is remarkable how flooded the system may be with products of auto-intoxication and give no noticeable signs except those in the eye. These children very often run daily temperatures, have the most offensive stools, pass albumen in the urine, etc., and are candidates for a defective, or certainly at least a deficient classification. Therefore the early recognition of the importance of the signs of phlyctenular conjunctivitis and keratitis will lead to conservation of efficiency not dreamed of.

It has been recognized for years that certain inflammations of the eye are due to errors of metabolism, e. g., retrobulbar neuritis, scleritis, and cataract. We still have a great deal to learn concerning the finer qualities of metabolism. Disturbances of metabolism go hand in hand with habit in its broad sense, with the vasomotor system and the trophic nerve system.

Ophthalmologists often see the incipient signs of a breakdown of the balance of these processes before constitutional changes of sufficient extent have developed to attract the attention of the patient or the internist or laboratory worker. At other times laboratory tests and physical signs are positive where the patient is unaware of any defect—except the eye.

These cases are most common among people of 45 or more years of age, and if the signs are heeded many years of efficiency and happiness may be added to their lives.

I will mention a few of a long list of such signs. Loss of eye lashes or eyebrows. Here the metabolic error is not infrequently associated with ductless gland atrophy or insufficiency. A brawny eczematous thickening and redness of the loose skin covering the lids will recur and persist most exasperatingly under local treatment. Chronic

blepharitis and conjunctivitis due to diabetes, gout, etc., also will not recover unless systemic conditions are improved; likewise episcleritis, corneal scleral infiltrations, marginal keratitis, cyclitis, certain forms of cataract, vitreous opacities, synchysis scintillans, retino-choroidal degeneration, detachment of the retina, retrobulbar neuritis, etc.

In coping with these lesions we are confronted with a lack of laboratory and physical signs, and also in most cases very few subjective symptoms apart from the eye. Therefore it is difficult to make the patient realize the necessity of a more or less radical change of habit; and because of the negative objective signs the physician will not take the initiative in prescribing the necessary eliminative and nutritional measures.

However, in the study of metabolism we know certain units of food are necessary to produce a given number of calories of heat, or of a certain amount of energy for the activity of the individual per kilogram of his weight. Also that the waste products must be properly excreted, and that the nervous tone must be kept up, etc., etc.

Dr. George De Schweinitz has thrown a lot of light on a subdivision of this subject, viz.: the disturbances of the uvea due to auto-intoxication of gastro-intestinal origin. His studies have shown the marked complexity of the subject, and the absolute inadequacy of our present methods of investigation.

Metchnikoff has done much along the same line. He has shown that the physiological processes may be apparently normal in the presence of very marked putrefaction.

In other words, the eye shows conclusively that metabolism is not right, but we are unable to put our finger on the lesion. The only thing to be done is to regulate the habits and apply stimulative measures to the various systems in an empirical way, until some more satisfactory technic can be developed to test metabolic functions. At the same time we will anticipate and prevent serious damage to vital structures.

In conclusion I wish to state that while it is the duty of the ophthalmologist to insist on a decomposition when there is papilloedema with infiltration of round cells before possibly a localization can be made of a brain tumor; to insist on the use of specific remedies in the presence of disseminated choroiditis despite the negative Wassermann; to insist on rest in bed in the presence of retinal hemorrhage even with only a trace of albumen in the urine and not a very high blood pressure; it is, from the standpoint of preventive medicine and conservation of efficiency, also his duty to insist that proper laboratory and clinical tests be made in these early ocular signs of breaking down of systemic groups. Also, in the absence of conclusive signs to the internist, and only the eye signs and subjective symptoms as a basis, the patient should be put on a program of habit, medication, and hygiene which will not only cure the local condition but stop the subtle undermining of vitality and efficiency.

By having these points in mind the ophthalmologist will find that the dry routine of refraction

will take on an entirely different aspect of marked clinical interest, and our reputed narrow specialty will become a surprisingly wide one. And finally, that better co-operation between medicine and surgery and the specialties will be stimulated.

Discussion.

Dr. Harold Gifford, Omaha: As we go along we are more and more impressed with the fact that the ophthalmologist is getting to be somewhat of a minor factor in the treatment of a large number of eye diseases, and between the dentist and general practitioners, not much is left for the oculist! That, however, does not relieve us of the responsibility of getting all the light that we can on these obscure cases. Looking back on 30 years of practice, I can see many cases which I treated somewhat vaguely and ineffectually, without knowing at all the real cause of the trouble—cases of iritis, uveitis, retrobulbar neuritis—cases which we used to treat, and many of them got well, without attention to the real cause of the trouble, which may have been a temporary one. Of course, we knew that a lot of obscure eye diseases are due to nasal and general troubles, but until comparatively recently I did not appreciate how many were due to bad teeth. Since we have known the effects of pyorrhea, and have a radiogram of the teeth as part of the regular examination, we diagnose a good many cases that we formerly missed out on. To just give you one which impressed me: The patient, a woman of about 35, had lost one eye from malignant uveitis. All sorts of things had been tried. By giving full doses of salicylate we could hold the thing for a time, but one eye was practically lost and the other eye was started in the same way. We had asked her whether there was anything the matter with her teeth and she said "Nothing at all." They had been gone over by a good dentist who said that they were perfectly sound. We had a radiogram taken which showed two little apical abscesses. We had those teeth pulled out and all symptoms disappeared; the threatened blindness is a thing of the past. When it comes to treatment of these cases which depend upon some extra-ocular cause, ought we to simply turn them over to the general man and wash our hands of them, or should we after a thorough examination and a line of treatment and suggestion by the general practitioner reassume the main responsibility of the case and see that the treatment is carried out with full regard to the importance of the eye symptoms? There is a strong temptation to follow out the former course, but I believe the latter will give us a better result so far as the eyes are concerned. With regard to the treatment of trouble depending upon arterio-sclerosis, including incipient cataracts, the question of how long the treatment should be continued is an important one. If we grant that iodide of potassium or any other remedy is of use in these cases, can we escape from the conclusion that the remedy should be continued as long as the patient lives? Certainly the tendency to arterio-sclerosis is not going to diminish with advancing age. This brings me to a point which is sociological. I am a socialist politically, and I think the practice of medicine will never be what it ought to be until socialism is established, at least in medicine; that is, not until the economic factor is entirely eliminated and we can feel free to recommend whatever treatment, physician or surgeon seems best, without regard to the pocketbook of either the medical man or the patient.

I enjoyed Dr. Alexander's paper very much, but I differ from him slightly as to the treatment of phlyctenular disease of the eye. There are parts of the world where what he says about phlyctenular disease is very true. In the south among the negroes, it is very common and destructive, and in

the clinic at Zürich where I was formerly assistant, the hospital was half full of phlyctenular keratitis; but in Nebraska and vicinity, I must say that a large portion of the cases of phlyctenular disease that I have seen, have occurred in children who seemed otherwise perfectly healthy, and who have made excellent recoveries without any treatment whatever; in spite of the well-known fact that a large number of these cases show tuberculin reactions. I have seldom resorted even to the cod liver oil or iron. If you can get them to take good care of the edges of the lids, to keep the nose well cleaned with salt solution, and to use yellow ointment in the eyes and on the lids and in the nostrils, and can have this kept up for a month or two after the least sign of the disease have disappeared, the great majority of them get well without any other treatment.

Dr. W. W. Behlow: This paper of Dr. Alexander's seems to me to strike a very fundamental note. The very wealthy patient is able to pay for the various specialists' examinations and therefore may derive benefit from such examinations. The pauper, the indigent, who comes to our free clinics, really receives better examinations and better correlation of these examinations than the very wealthy patient does. The man half-way between, the man of moderate means, the wage-earner, does not receive any of this special work. Realizing that, a group of physicians in St. Luke's decided to co-operate in the diagnosis of disease for the average citizen. The result has been that the cases have been worked up more intelligently, and the examination of the eye has certainly told the members of this particular organization considerable about the general condition of the patient. I have been told that in one case the finding of a keratitis was the particular sign which made the diagnosis of syphilis. Again, the finding of hemorrhages in the retina has been of utmost importance in pointing toward myxedematous state, arteriosclerotic state, or nephritic state. To make my discussion rather brief, I would say that it seems to me that we have in the past failed to recognize the importance of definite correlation of various specialists (and I do not except the eye) with the general medical and surgical work, and that this failure has been one of the greatest drawbacks in the practice of medicine for the average patient. The sooner we get to the point where the ophthalmologist, aurist and laryngologist, neurologist and other specialists, join with the so-called internist and surgeon in really giving medical treatment and medical diagnosis to our average patient, not the Midas or the pauper) the sooner we will arrive at much better medicine and one which will drive the so-called cults out of existence.

Dr. Emmet Rixford: There is a rather powerful force active at present in the direction indicated by Dr. Behlow, namely, the fashion of medical men to get together in small groups with a common waiting room, a common telephone operator, stenographer, etc., and a common laboratory. From three to five doctors, a medical man, a surgeon, an eye man, a gynecologist, associating themselves together and working together, is quite a common thing in the eastern cities and there is more or less of it here. I think this is an economic arrangement and one which will make it easily possible for the man of small means to have the services of several people under the direction of one of the group who may be his particular physician.

There is another strong force in most of the states of the Union leading in the same direction, and that is industrial accident insurance. Under the California law, some of us have had the experience of patients from the laboring classes being sent around from one specialist to another until they get pretty much the opinion of everybody and at not great expense.